



The Perfect Winter Solution

# ValvTect Diesel Guard Antigel/Deicer with VT 330A & "SMART" Deicer

## THE BEST SOLUTIONS TO SOLVE WINTER DIESEL PROBLEMS

Many of today's ultra low sulfur distillate fuels do not respond well to current antigel additives, or even No. 1 blending. This is caused by severe hydro-treating during the refining process. The result is a "hard to treat" fuel that contains a greater quantity of heavy wax and high concentrations of water. These make effective winterization more difficult and fuel related problems more frequent.

### Superior Cold Temperature Operability

ValvTect's VT 330A and "SMART" deicer have been developed to provide superior cold temperature operability of ultra low sulfur distillate fuels.

### VT 330A , A Breakthrough in Antigel Technology

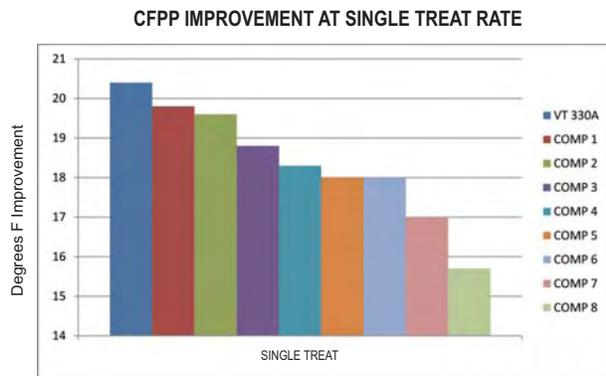
VT 330A is a new proprietary wax crystal modifier/cold flow improver that provides superior cold temperature operability on the widest range of distillate fuels. It can provide CFPP improvement comparable to a 70% blend of No. 1 and is proven to be superior to all other antigel additives tested.

### VT 330A Out Performed all Other Cold Flow Improvers

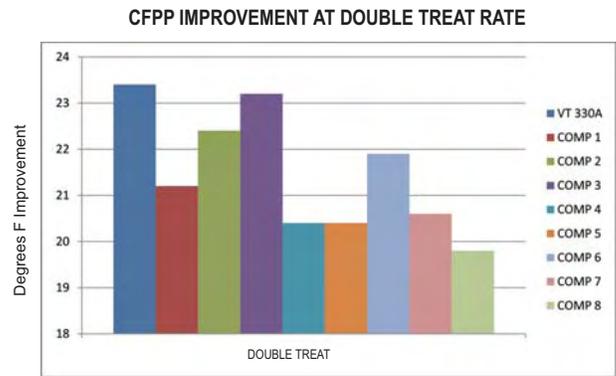
In a recent research study, 137 individual tests were performed using ultra low sulfur diesel fuels from five regions around the country. The tests compared VT 330A with the industry's leading cold flow improver additives. Here are the results:

- VT 330A outperformed all competitive products
- VT 330A outperformed the average of all competitive products by 13%

### Proof Is In Performance



- Average improvement of all competitive cold flow improvers was 18.1° F
- VT 330A improvement was 20.4° F



- Average improvement of all competitive cold flow improvers was 21.2° F
- VT 330A improvement was 23.4° F

### Lower Additive Pour Point = Better Handling, Less Inventory & Lower Treat Cost

All cold flow improvers are viscous and difficult to pour when it is cold. VT 330A has better cold temperature handling characteristics (lower additive pour point) than all the competitive antigel additives that were tested. This allows for better handling. It also allows Diesel Guard™ Antigel/Deicer to be up to twice as concentrated (1:3000 vs. 1:1500) than other antigel additives. The results are easier to pour at cold temperatures, less inventory and a lower treat cost per gallon.

- VT 330A has a lower additive pour point than all competitive products tested

*"It's Better To Be Safe Than Frozen"*<sup>SM</sup>

# ValvTect Diesel Guard Antigel/Deicer with VT 330A & "SMART" Deicer

## "SMART" DEICER PREVENTS WATER IN FUEL FILTERS FROM FREEZING

When cold temperatures hit, the wax in diesel fuel gels and the water freezes. Either can plug the vehicle's fuel filter and shut the engine down.

Because water freezes at 32°F, a higher temperature than when the wax in diesel fuel gels, it is important for your winter diesel additive to contain a deicer that can lower the freeze point of the water below the CFPP of the diesel fuel. This will keep ice crystals from plugging the fuel filter and the vehicle running at sub-zero temperatures.

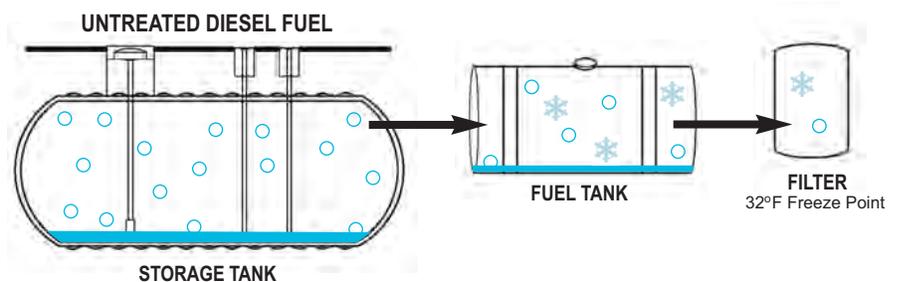
All deicers lower the freeze point of water at a 1:1 ratio (deicer to water). The more deicer the more effective it will be. However, the more water in the fuel filter the less effective the deicer can be.

Since the objective is to lower the freeze point of the water in the fuel filter, less water and more deicer in the filter will help prevent it from "icing" up.

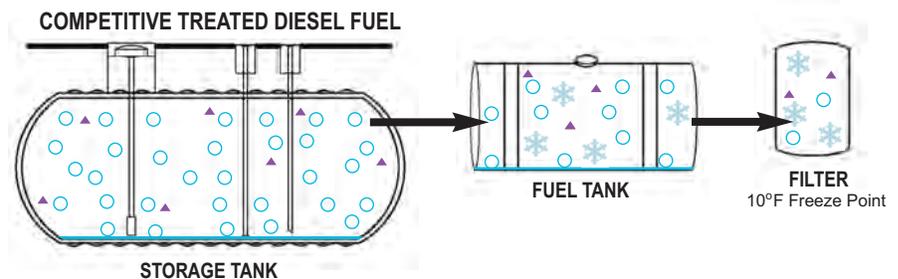
Many deicers pick up (absorb) water from the primary storage tank and the vehicle fuel tank and carry it to the fuel filter. Diesel Guard's "SMART" deicer absorbs less water than many competitive deicers and Diesel Guard's antigel/deicer additives contain up to three times more deicer than most competitive winter diesel additives.

The illustrations<sup>1</sup> below represent how Diesel Guard's "SMART" deicer provides maximum freeze point reduction to help keep vehicles operating at sub zero temperatures.

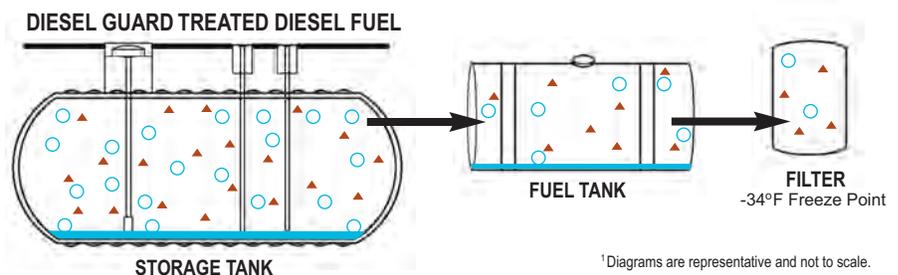
In a fuel system with no deicer, water in the fuel and on the bottom of the vehicle fuel tank and fuel filter can freeze when it reaches 32°F.



Deicer contained in most competitive fuel additives can absorb water from the storage and vehicle fuel tanks, and may not effectively lower the freeze point of the water in the fuel filter. In this example the freeze point of the water in the fuel filter is lowered to only 10°F.



Diesel Guard's "SMART" deicer absorbs less water and can lower the freeze point of water in the fuel filter to as low as -34°F or lower.



<sup>1</sup>Diagrams are representative and not to scale.

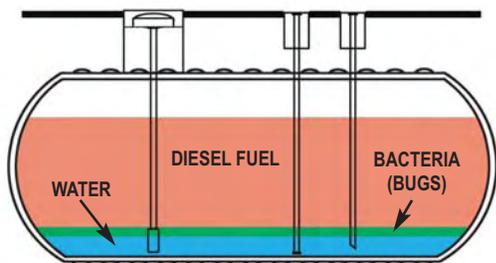


- Diesel Guard's "SMART" deicer picks up less moisture before entering the fuel filter. This provides maximum reduction of the water's freeze point in the fuel filter.
- Diesel Guard™ antigel/deicer additives contain up to 3 times more deicer than typical competitive winter fuel additives.

# Diesel Guard™ Tank Maintenance Program

## HERE IS THE PROBLEM

Up to 50% of all winter diesel vehicle breakdowns can be attributed to water and bacteria (bugs) being pumped from the main diesel storage tank to the vehicle. This can cause plugged fuel filters, equipment downtime, lost revenue and profitability.



## HERE IS THE DIESEL GUARD™ PROGRAM SOLUTION

A three step pre-winter tank maintenance program designed to keep fleets up and running by safely removing the two biggest causes of winter shutdowns; water (ice crystals) and bacteria. Here's what the program does:

**Step 1, Pump Out Excess Water:** Over time water builds up in diesel storage tanks creating a breeding ground for bacteria. Even when entrained in a vehicle's diesel fuel, water will begin to freeze when the fuel temperature reaches 32°F forming ice crystals that can plug fuel filters. Excess water in the diesel storage tanks is pumped out and properly disposed of.

**Step 2, Chemically Remove Residual Water:** Any remaining water is removed by treating the next 2 - 3 diesel fuel deliveries with Diesel Guard™ Tank Dri, a non-alcohol water dispersant and freeze point depressant.



Diesel Guard Tank Dri™ is a non-alcohol water dispersant and deicer formulated to safely remove a controlled amount of water from the diesel fuel's storage tank.

- Safely Removes Moisture
- Reduces the Freeze Point of Water
- Non-Alcohol & Non-Flammable
- Ultra Low Sulfur Compliant
- 1 Gallon Treats 7,500 Gallons of Diesel Fuel

**Step 3, Kill Bacteria & Bio-Contamination:** Once all water is removed, the tank is "shock" treated with BioGuard™ Micro-Biocide, the industry's most effective biocide, to kill bacteria and other bio-contamination.†



BioGuard™ is an EPA registered dual phase micro-biocide that kills bacteria and other bio-contamination that cause fuel filter plugging and corrosion.

- Kills Bacteria and Algae
- Fast Acting
- Ultra Low Sulfur Compliant
- 1 Gallon Treats 2,500 Gallons of Diesel Fuel

†Spare fuel dispenser filters should be on site to filter out dead bacteria after BioGuard™ treatment.

## OTHER DIESEL GUARD WINTER PRODUCTS

*It's Better To Be Safe Than Frozen!™*

### Diesel Guard™ Anti-Gel Deicer



A concentrated multifunctional winter diesel additive for individual vehicle treatment.

- Concentrated for Easy Storing & Handling
- Reduces Cold Filter Plug Point (CFPP)
- Reduces Pour Point
- Contains Cetane Improver & Detergent
- One Quart Treats 250 Gallons

### Diesel Guard D-Thaw™



The most effective product to reliquefy gelled diesel fuel and de-ice frozen filters.

- Reliquefy Gelled Diesel Fuel
- De-Ice Frozen Filters
- Non-Alcohol Formula
- Add Directly to Frozen Fuel Filter to Melt Ice & Wax
- One Quart Treatment

For additional information, please contact  
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